NON-PUBLIC?: N
ACCESSION #: 9105030243
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Seabrook Station PAGE: 1 OF 03

DOCKET NUMBER: 05000443

TITLE: Manual Reactor Trip Due to Loss of a Vital Bus
EVENT DATE: 03/30/91 LER #: 91-002-00 REPORT DATE: 04/26/91

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Allen L. Legendre TELEPHONE: (603) 474-9521
Lead Engineer - Compliance,
Extension 2373

COMPONENT FAILURE DESCRIPTION:
CAUSE: B SYSTEM: ED COMPONENT: XFMR MANUFACTURER: G182
REPORTABLE NPRDS: Y

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On March 30, 1991 at 11:48 a.m., a manual reactor trip was initiated while the plant was at approximately 50% power. The reactor trip was initiated due to a turbine runback coincident with a loss of the condenser steam dump valves.

While the plant was at 100% power, an electrical fault occurred in the transformer section of 480 volt AC unit substation EDE-US-52 resulting in a loss of all loads powered from this bus. Consequently, a turbine runback was initiated by a loss of Generator Stator Cooling (GSC) system control power. Additionally, control power to the condenser steam dump valves was lost. In response to the loss of the condenser steam dump valves, all four atmospheric steam dump valves and several steam generator safety valves automatically actuated.

Following the reactor trip and turbine trip, a Main Feedwater Isolation and an Emergency Feedwater actuation occurred as designed. Additionally, upon restoration of power, the Control Room Emergency Air Cleanup and Filtration Subsystem actuated as designed.

The root cause for the electrical fault has been determined to be a turn-to-turn fault on one phase of the 4160/480 volt AC transformer's primary winding. The transformer for the bus was replaced. Additionally, this event will be discussed with operations personnel during requalification training. An emphasis will be placed on the reportability requirements pursuant to 10 CFR 50.72 regarding ESF actuations.

This is the first event of this type at Seabrook Station.

END OF ABSTRACT

On March 30, 1991 at 11:48 a.m., EST, a manual reactor trip was initiated while the plant was at approximately 50% power. The reactor trip was initiated due to a turbine runback caused by a loss of GSC TJ! control power. Additionally, control power to the condenser steam dump valves was lost.

Description of Event

On March 30, 1991 at 11:45 a.m., while the plant was at 100% power, an electrical fault occurred in the transformer section of 480 volt AC unit substation EDE-US-52 ED! resulting in a loss of all loads powered from this bus. Consequently, a turbine runback was initiated due to the loss of control power to the GSC system. Additionally, due to the power loss, the condenser steam dump valves failed to open in response to the turbine runback. This resulted in the automatic actuation of all four atmospheric steam dump valves (ASDVs) and several steam generator safety valves.

Following the reactor trip and turbine trip, a Main Feedwater Isolation JB! actuation occurred as designed due to the reactor trip and low Tavg. The motor driven Emergency Feedwater (EFW) pump was manually started due to the unavailability of the startup feed pump (SUFP). The SUFP was unavailable due to the power loss to the SUFP prelube pump. Approximately six minutes later, an EFW BA! actuation occurred as designed due to a low-low level signal in the "C" steam generator.

In addition, the Control Room Emergency Air Cleanup and Filtration System

VI! actuated as designed upon restoration of power to fan CBA-FN-16A and its corresponding discharge damper CBA-DP-27A. It should be noted however, that it was not immediately recognized that a report in accordance with 10CFR50.72(b)(2)(ii) was required, and consequently, the
four-hour report for this ESF actuation was delayed.

Safety Consequences

There were no adverse safety consequences as a result of this event. All the applicable trips and interlocks associated with the reactor trip and Engineered Safety Features actuations functioned as designed.

All operator actions were determined to be appropriate to ensure the safety of the plant. At no time during this event was there any impact on the health and safety of plant employees or the public.

Root Cause

The root cause for the electrical fault has been determined to be a turn-to-turn fault on one phase of the 4160/480 volt AC transformer's primary winding. The 4160 volt AC supply breaker to the substation opened on instantaneous overcurrent causing a loss of all loads powered from bus E52.

Corrective Actions

After the trip, the plant was placed in HOT STANDBY in accordance with operating procedure OS1001.11 "Post Trip to Hot Standby". An event evaluation and post trip review were immediately initiated. A Human Performance Evaluation System (HPES) analysis as well as a root cause analysis were also initiated.

The transformer for bus E52 was replaced. Additionally, this event will be discussed with operations personnel during requalification training. An emphasis will be placed on the reportability requirements pursuant to 10 CFR 50.72 regarding ESF actuations. This training is expected to be completed by July 29, 1991.

Plant Conditions

At the time of this event, the plant was in Mode 1, Power Operation at 100%, with an RCS temperature of 587 degrees Fahrenheit and pressure of 2,235 psig.

This is the first event of this type at Seabrook Station.

New Hampshire
Yankee Ted C. Feigenbaum
President and
Chief Executive Officer

NYN-91071

April 26, 1991

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Reference: Facility Operating License No. NPF-86, Docket No. 50-443

Subject: Licensee Event Report (LER) No. 91-002-00: Manual Reactor Trip Due to Loss of a Vital Bus

Gentlemen:

Enclosed please find Licensee Event Report (LER) No. 91-002-00 for Seabrook Station. This submittal documents an event which occurred on March 30, 1991, and is being reported pursuant to 10CFR50.73(a)(2)(iv).

Should you require further information regarding this matter, please contact Mr. Allen L. Legendre, Lead Engineer-Compliance, at (603) 474-9521, extension 2373.

Very truly yours,

Ted C. Feigenbaum

TCF:WJT/act

Enclosures: NRC Forms 366, 366A

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